# EXHIBIT 1

# Richard A. Blanchard, Ph.D.

# **Expertise**

- MOS and Bipolar Device Technology
- Semiconductor Device Physics
- Microchip Fabrication & Analysis
- Electronic Systems
- Electrical & Electronic Failures
- Assembly & Packages
- CMOS, DMOS & BiCMOS
- Power IC's & Power Electronics
- Printed Circuit Board Manufacturing
- Semiconductor Process & Control

### **Professional Summary**

Dr. Blanchard has over 35 years of combined industry, research, academic, and consulting experience. His research covers semiconductor device and electronics design, semiconductor device physics, semiconductor manufacturing processes and equipment, failure analysis, reverse engineering of semiconductor and electronic circuits, and reliability modeling. Dr. Blanchard's work has resulted in more that 120 U.S. issued patents. He has also written or co-authored numerous books and articles in the semiconductor design and process development areas as well as failure analysis.

# **Employment History**

From: 1998 Silicon Valley Expert Witness Group, Inc.

To: Date Mountain View, CA

Position: Director, Advanced Technologies

Silicon Valley Expert Witness Group, Inc. (SVEWG) is a high technology, "Silicon Valley" consulting company specializing in expert witness litigation support and technology consulting.

SVEWG has an extensive roster of world-class technology experts used in the defense and promotion of intellectual property rights and other litigation disputes. SVEWG Principals offer extensive in-house technology, legal and business expertise and have direct access to

senior litigation and technology consultants worldwide.

From: 1991 Failure Analysis Associates, Inc. (Now named "Exponent")

To: 1998 Menlo Park, CA

Position: Principal Engineer & Division Manager

Responsible for the Electrical/Electronic Division of Failure Analysis Associates providing consulting services to the electrical

and electronics industry. Specific duties include:

Semiconductor devices. Failure analysis and reverse engineering

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of solid-state electronic components and circuits. Semiconductor processing and semiconductor process equipment. Semiconductor manufacturing and process control.

- Failure analysis of electric and electronic systems, subsystems, and components, including causes of electrical fires
- Reliability modeling and lifetime prediction of electrical and electronic systems and subsystems
- Automotive electronics. Design of discrete devices and integrated circuits
- Power Electronics. Power MOS and Smart Power Technologies

From: 1987 To: 1991 **IXYS Corporation** 

1991

Position: Senior Vice President

Responsible for the development of IC products. Established an inhouse CAD capability. Recruited an IC design team and coordinated the definition and development of IXYS ICs. Identified, qualified and monitored the IC foundries that manufactured these circuits. Set up testing capability at IXYS. Coordinated assembly on IC's. Worked on various MOSFET and IGBT device, test, and

assembly problems.

From: 1982

Siliconix, Inc.

To: 1987

Position: Vice President, Engineering

Other titles held at Siliconix, Inc. were Engineering Manager (1982-1983) and Director (1983-1984). Responsible for the development of advanced process technology and the design of both discrete devices (JFETs, lateral and vertical DMOS transistors) and integrated circuits (low and high voltage CMOS, D/CMOS and bipolar-JFET). These responsibilities included providing technical and administrative direction to two IC design groups in the United Kingdom and the U.S., one device and process design group and a "quick-turn" processing line. Two CAD groups, one in the U.K. and one in the U.S., and a CAE group developing computer software and hardware for the engineering community rounded out the department. Personally responsible for many key innovations and inventions in power MOS and D/CMOS IC technology and their assembly and test requirements. He submitted approximately 20 patent disclosures while employed at Siliconix, Inc. He holds the two key "trench FET" patents, of which he is the sole inventor.

From: 1976

Supertex, Inc.

To: 1982

Position: Founder and Vice President, MOS Power Products

Responsible for investigation of new semiconductor devices and new technologies. In charge of Power MOS device research, design and development. His work lead to the design and development of both the discrete power MOS device family and the high voltage IC (HVIC) family sold by Supertex, Inc. Responsible for an in-house assembly area as well as engineering aspects of power MOS and HVIC testing.

From: 1976 Cognition, Inc.

To: 1978

Position: Founder and Consulting Engineer

> Responsible for developing the process technology for fabricating monolithic silicon pressure sensors. A process line was established for the manufacture of piezoresistive pressure sensors, including the

precision etching of thin silicon diaphragms.

1974 From:

**Foothill College** 

To: 1978 Position:

Associate Professor, Assistant Division Chairman, Engineering &

Technology Division

Accomplishments included developing the curriculum for the Semiconductor Technology Program, and establishing a small processing facility for teaching students the fundamentals of

semiconductor technology. Supervised approximately 60 instructors

in the evening and off-campus programs.

1974 From: 1976 **Independent Consultant** 

To: Duties:

Consultant to the semiconductor industry, including court appointed

"Special Master" in the Fairchild Semiconductor Corporation v. National Semiconductor Corporation Isoplanar patent suit.

**Fairchild Semiconductor** 1970 From: To:

1974 Mountain View, CA

> Position: Senior Engineer, Department Manager

> > Responsible for the fabrication of the integrated circuits in the Polaroid SX-70 camera. Technologies directly related to this work include standard bipolar technology, bipolar- MOS technology, silicon gate technology and flip-chip assembly technology.

#### **Deposition and Trial Testimony (Past Five Years)**

<u>Apple Computer, Inc.</u> v. Tatung Co., International Court of Arbitration of the International Chamber of Commerce, Case No. 10099 AER. (D, R)

Anne Camilleri as Guardian for Andrea Camilleri, an incompetent Adult, vs. <u>Costco Companies, Inc., Thompson Merchandising, Everstar Merchandise</u>, So Yang Enterprises Co. Ltd. And Does 1 to 1000. Superior Court of the State of California, County of San Mateo, Case No. 407 06 & Case No. 408 615. (D)

Micrel, Inc. v. Federal Insurance Company, Superior Court of the State of California and Santa Clara County, Case No. CV786627. (D, R)

<u>Sun Microsystems</u> v. Kingston Technology, United States District Court, Northern District of California, Case No. C99-03610VRW. (D, R)

<u>Level One</u> v. Altima, United States International Trade Commission, Washington, D.C., Investigation No. 337-TA-435. (D, R, T)

Optus Networks Pty Ltd CAN 008 570 330 and Ors v. Leighton Contractors Pty Ltd CAN 000 893 667 and Ors, Supreme Court of New South Wales Sydney Registry Common Law Division Construction List, No. 55059 of 1997. (R, T)

<u>Federal Insurance Company</u> v. Metex Corporation, Superior Court of the State of California, County of San Francisco, No. 988899. (D, R)

Pekin Insurance Company and Green Bay Motor Sports, Inc. v. <u>American Suzuki Motor Corporation</u>, Circuit Court of the State of Wisconsin, County of Brown, No. 01-CV-416 (4/2002). (D)

Kenneth Toner and Daniel J. Harper, as Trustee of the Recall Claimants Trust v. Cadet Manufacturing Company, <u>I.R.C.A. S.P.A.</u>, Zoppas Industries S.P.A. and Still-man Heating Products Inc., Superior Court of the State of Washington, County of King, No. 98-2-10876-2SEA (4/2002). (D)

Allen Scott Schneider, Tami Schneider v. <u>Sentry Alarm, Inc.</u>, Sylvester's Alarm, Inc. a.k.a. Sylvester's Security Services, Inc. Automatic Alarm, Inc., Superior Court of the State of California, County of Santa Clara, Case No. CV 795867. (D)

David Bryte, Personal Representative of the Estate of Lova E. Bryte, deceased, et al, plaintiffs v. <u>Sunbeam Corporation</u> & Sears Roebuck and Co., defendants. In the United States District Court for the Northern District of West Virginia, Case No. 2:00-CV-93. (D, R)

SimpleTech, Inc. v. <u>Atmel Corporation</u>, Superior Court of the State of California, County of Santa Clara, Case No. CV 809851 (2004). (D, R)

Pavel Kuzmenko; Karina Kuzmenko and Kristina Kuzmenko v. Morningside Apartments, William R. Canihan, and <u>MacFrugal's Bargain Close Out</u>, Superior Court of the State of California, County of Sacramento, Case No. 01AS00112 (2004). (D)

State Farm Fire & Casualty Insurance Company; as subrogee for Terry Swan, and Terry Swan, individually v. <u>Sears, Roebuck and Co.</u>, a foreign corporation, the United States District Court for the Western District of Washington, Case No. C01-129 (C). (D, R)

Rexford Agin, Susan Agin and Daniel Agin v. <u>Sunbeam Products, Inc.</u>, in the United States District Court for the Southern District of Ohio Eastern Division, Civil Action No. C2030052. (D, R)

Bobby Cook, as Personal Representative of the Estate of Cathy Lynn Cook, Deceased; and Bobby Cook, Individually v. <u>Sunbeam Corporation, Sunbeam Products, Inc.</u>, Wal-Mart Stores, Inc., and Wal-Mart Stores, East, Inc., United States District Court for the Northern District of Alabama Southern Division, Case No. CV-01-B-2000-S. (D, R)

<u>IXYS Corporation</u> v. Advanced Power Technology, Inc., United States District Court for the Northern District of California San Francisco Division, Case No. C 02-3942 MHP. (D, R)

Motorola, Inc. v. Analog Devices, Inc., United States District Court for the Eastern District of Texas Beaumont Division, Civil Action No. 1:03-CV-0131 (RHC). (D, R)

Siliconix Inc., a Delaware corporation v. Alpha and Omega Semiconductor Inc., a California corporation, and Alpha and Omega Semiconductor Limited, a Bermuda corporation, United States District Court for the Northern District of California San Francisco Division, Case No. C03-04803 WHA (Inventor). (D)

Sunex, Inc. v. <u>Omnivision Technologies/Omnivision Technologies, Inc.</u>, a Delaware Corporation v. Sunex, Inc, Superior Court of the State of California County of San Diego, North County Division, Case No. 031205. (D)

<u>Fujitsu Limited</u> v. Cirrus Logic, Inc., Amkor Technology, Inc., Sumitomo Bakelite Co., Ltd., and Sumitomo Plastics America, Inc., Superior Court of the State of California County of Santa Clara, Case. No. 1-03-CV-009885. (D)

<u>Silicon Laboratories, Inc.</u> v. Ali Niknejad & Axiom Microdevices, Inc., United States District Court for the Western Division of Texas Austin Division, Civil Action No. A-04-CA-155-SS. (D, T)

Joel R. Bertelson, Daniel E. Mendl, Daniel E. Mendl as Trustee, The Bigfoot Ranch, II, Inc., Daniel E. Mendl as Attorney In Fact for Katherine Hope Bertelson and Union Mutual Fire Insurance Co. and New England Guaranty Insurance Co., Inc. v. <u>Sunbeam Products, Inc.</u> and The Allen Agency, Inc., Superior Court of the State of Vermont Chittenden County, SS, Docket No. S0312-04 CnC. (D)

Micrel Inc. v. <u>Monolithic Power Systems</u>, Michael R. Hsing, James C. Moyer, and DOES 1-20 inclusive, Unites States District Court for the Northern District of California San Francisco Division, Case No. C04-04770 JSW (JCS). (D)

<u>Siliconix, Inc.</u> v. Denso Corporation, United States District Court for the Northern District of California, San Francisco Division, Case No. C05-01507 WHA and Consolidated Actions Nos. C04-00344 WHA and C05-03617 WHA. (D)

<u>Tessera, Inc.</u> v. Micron Technology, Inc. and Infineon, United States District Court for the Eastern District of Texas Marshall Division, Case No. 2-05CV94. (R)

<u>Siliconix, Inc.</u> v. Semiconductor Components Industries, LLC d/b/a On Semiconductor, American Arbitration Association, Phoenix, Arizona, Case No. 76 133 Y 00327 05 DEAR. (D)

John Rumans, Jeanne Rumans and Jessica Rumans v. <u>Sunbeam Products, Inc.</u>, United States District Court for the Western District of Missouri Western Division, Case No. 05-1226-CV-W-HFS. (D)

Markel American Insurance Company, Insurance Company of North America and State Farm Fire and Casualty Company v. Cadet Heater Manufacturing Company v. <u>ZIMM</u> (Third-Party Defendants), United States District Court for the District of Oregon, Case No. 3:05-CV-1188 KI (Lead Case). (D, R)

Verigy US, Inc. v. Romi Omar Mayder, Wesley Mayder, <u>Silicon Test Systems, Inc.</u>, and Silicon Test Solutions, LLC, United States District Court for the Northern District of California San Jose Division, Case No. C07-04330 RMW (HRL). (D)

Nathan J. Sheridan v. Fladeboe Volkswagen, Inc., <u>Volkswagen of America, Inc.</u>, Superior Court of the State of California for the County of Orange, Case No. 06CC09510. (D)

Quantum Research Group v. <u>Apple Computer Company, Inc.</u>, Cypress Semiconductor Corp., Cypress Microsystems, and Fingerworks, Inc., Unites States District of Maryland, Civil Action No. 1:05-CV-03408-WMN. (D)

D = Deposition

R = Report

T = Testimony in Court

#### **Patents**

Patent Number	<b>Date Issued</b>	<u>Title</u>
7,339,252	03/04/2008	Semiconductor Having Thick Dielectric Regions
7,304,347	12/04/2007	Method for Fabricating a Power Semiconductor Device Having a
		Voltage Sustaining Layer with a Terraced Trench Facilitating
		Formation of Floating Islands
7,244,970	07/17/2007	Low Capacitance Two-Terminal Barrier Controlled TVS Diodes
7,224,027	05/29/2007	High Voltage Power MOSFET Having a Voltage Sustaining Region
		that Includes Doped Columns Formed by Trench Etching and
		Diffusion from Regions of Oppositely Doped Polysilicon
7,202,494	04/10/2007	FinFET Including a Supperlattice
7,199,427	04/03/2007	DMOS Device with a Programmable Threshold Voltage
7,138,289	11/21/2006	Technique for Fabricating Multilayer Color Sensing Photodetectors

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7,094,621	08/22/2006	Fabrication on diaphragms and 'Floating' Regions of Single Crystal Semiconductor for MEMS Devices
7,091,552	08/15/2006	High Voltage Power MOSFET Having a Voltage Sustaining Region
7,071,332	06/13/2000	that Includes Doped Columns Formed by Trench Etching and Ion
		Implantation
7,084,455	08/01/2006	Power Semiconductor Device Having a Voltage Sustaining Region that
7,064,433	08/01/2000	
		Includes Terraced Trench with Continuous Doped Columns Formed in
7.067.276	06/27/2006	an Epitaxial Layer
7,067,376	06/27/2006	High Voltage power MOSFET Having Low On-Resistance
7,061,072	06/13/2006	Integrated Circuit Inductors Using Driven Shields
7,023,069	04/04/2006	Method for Forming Thick Dielectric Regions Using Etched Trenches
7,019,360	03/28/2006	High Voltage Power MOSFET Having a Voltage Sustaining Region
		that Includes Doped Columns Formed by Trench Etching Using an
		Etchant Gas that is also a Doping Source
7,015,104	03/21/2006	Technique for Forming the Deep Doped Columns in Superjunction
6,992,350	01/31/2006	High Voltage Power MOSFET Having Low On-Resistance
6,949,432	09/27/2005	Trench DMOS Transistor Structure Having a Low Resistance Path to a
		Drain Contact Located on an Upper Surface
6,921,938	07/26/2005	Double Diffused Field Effect Transistor Having Reduced On-
		Resistance
6,906,529	06/14/2005	Capacitive Sensor Device With Electrically Configurable Pixels
6,882,573	04/19/2005	DMOS Device with a Programmable Threshold Voltage
6,861,337	03/01/2005	Method for Using a Surface Geometry for a MOS-Gated Device in the
, ,		Manufacture of Dice Having Different Sizes
6,812,526	11/02/2004	Trench DMOS Transistor Structure Having a Low Resistance Path to a
, ,		Drain Contact Located on an Upper Surface
6,812,056	11/02/2004	Technique for Fabricating MEMS Devices Having Diaphragms of
		"Floating" Regions of Single Crystal Material
6,794,251	09/21/2004	Method of Making a Power Semiconductor Device
6,790,745	09/14/2004	Fabrication of Dielectrically Isolated Regions of Silicon in a Substrate
6,777,745	08/17/2004	Symmetric Trench MOSFET Device and Method of Making Same
6,750,523	06/15/2004	Photodiode Stacks for Photovoltaic Relays and the Method of
-,,-=-	00, -0, -00	Manufacturing the Same
6,750,104	06/15/2004	High Voltage Power MOSFET Having a Voltage Sustaining Region
0,700,101	00/12/2001	that Includes Doped Columns Formed by Trench Etching Using an
		Etchant Gas that is also a Doping Source
6,734,495	05/11/2004	Two Terminal Programmable MOS-Gated Current Source
6,730,963	05/04/2004	Minimum Sized Cellular MOS-Gated Device Geometry
6,724,044	04/20/2004	MOSFET Device Having Geometry that Permits Frequent Body
0,727,077	UT/20/2004	Contact
6,724,039	04/20/2004	Semiconductor Device Having a Schottky Diode
6,713,351	03/30/2004	Double Diffused Field Effect Transistor Having Reduced On-
0,/13,331	03/30/2004	Resistance
6 710 414	02/22/2004	
6,710,414	03/23/2004	Surface Geometry for a MOS-Gated Device that Allows the

		Manufacture of Dice Having Different Sizes
6,710,400	03/23/2004	Method for Fabricating a High Voltage Power MOSFET Having a
		Voltage Sustaining Region that Includes Doped Columns Formed by
		Rapid Diffusion
6,689,662	02/10/2004	Method of Forming a Higher Voltage Power MOSFET Having Low
6 606 244	02/02/2004	On-Resistance
6,686,244	02/03/2004	Power Semiconductor Device Having a Voltage Sustaining Region that
6 660 571	12/09/2003	Includes Doped Columns Formed with a Single Ion Implantation Step High Voltage Power MOSFET Having Low On-Resistance
6,660,571 6,656,797	12/09/2003	High Voltage Power MOSFET Having Low On-Resistance High Voltage Power MOSFET Having a Voltage Sustaining Region
0,030,777	12/02/2003	that Includes Doped Columns Formed by Trench Etching and Ion
		Implantation
6,649,477	11/18/2003	Method for Fabricating a Power Semiconductor Device Having a
		Voltage Sustaining Layer with a Terraced Trench Facilitating
		Formation of Floating Islands
6,627,949	09/30/2003	High Voltage Power MOSFET Having Low On-Resistance
6,624,494	09/23/2003	Method for Fabricating a Power Semiconductor Device Having a
( (21 107	00/17/2002	Floating Island Voltage Sustaining Layer
6,621,107 6,593,619	09/16/2003 07/15/2003	Trench DMOS Transistor with Embedded Trench Schottky Rectifier
6,593,174	07/15/2003	High Voltage Power MOSFET Having Low On-Resistance Field Effect Transistor Having Dielectrically Isolated Sources and
0,393,174	07/13/2003	Drains and Method for Making Same
6,576,516	06/10/2003	High Voltage Power MOSFET Having a Voltage Sustaining Region
0,270,210	00/10/2003	that Includes Doped Columns Formed by Trench Etching and
		Diffusion from Regions of Oppositely Doped Polysilicon
6,566,201	05/20/2003	Method for Fabricating a High Voltage Power MOSFET Having a
		Voltage Sustaining Region that Includes Doped Columns Formed by
		Rapid Diffusion
6,538,279	03/25/2003	High-Side Switch With Depletion-Mode Device
6,492,663	12/10/2002	Universal Source Geometry for MOS-Gated Power Devices
6,479,352	11/12/2002	Method of Fabricating High Voltage Power MOSFET Having Low On-Resistance
6,472,709	10/29/2002	Trench DMOS Transistor Structure Having a Low Resistance Path to a
0,472,707	10/27/2002	Drain Contact Located on an Upper Surface
6,468,866	10/22/2002	Single Feature Size MOS Technology Power Device
6,465,304	10/15/2002	Method for Fabricating a Power Semiconductor Device Having a
, ,		Floating Island Voltage Sustaining Layer
6,432,775	08/13/2002	Trench DMOS Transistor Structure Having a Low Resistance Path to a
		Drain Contact Located on an Upper Surface
6,420,764	07/16/2002	Field Effect Transistor Having Dielectrically Isolated Sources and
C 402 427	06/11/2002	Drains and Methods for Making Same
6,403,427	06/11/2002	Field Effect Transistor Having Dielectrically Isolated Sources and
6,399,961	06/04/2002	Drains and Method for Making Same Field Effect Transistor Having Dielectrically Isolated Sources and
0,577,701	00/07/2002	Tiold Effect Transistor Traving Diefectivally Isolated Sources and

		Drains and Method for Making Same
6,369,426	04/09/2002	Transistor with Integrated Photodetector for Conductivity Modulation
6,368,918	04/09/2002	Method of Fabricating an Embedded Flash EEPROM with a Tunnel
, ,		Oxide Grown on a Textured Substrate
6,331,794	12/18/2001	Phase Leg with Depletion-mode Device
6,316,336	11/13/2001	Method for Forming Buried Layers With Top-Side Contacts and the
, ,		Resulting Structure
6,291,845	19/18/2001	Fully-Dielectric-Isolated FET Technology
6,272,050	08/07/2001	Method and Apparatus for Providing an Embedded Flash-EEPROM
		Technology
6,239,752	05/29/2001	Semiconductor Chip Package that is also an Antenna
6,225,662	05/01/2001	Semiconductor Structure with Heavily Doped Buried Breakdown
		Region
6,215,170	04/10/2001	Structure for Single Conductor Acting as Ground and Capacitor Plate
		Electrode Using Reduced Area
6,198,114	03/06/2001	Field Effect Transistor Having Dielectrically Isolated Sources and
		Drains and Method for Making Same
6,069,385	05/30/2000	Trench MOS-Gated Device
6,064,109	05/16/2000	Ballast Resistance for Producing Varied Emitter Current Flow Along
	0.4/0.4/2.000	the Emitter's Injecting Edge
6,046,473	04/04/2000	Structure and Process for Reducing the On-Resistance of MOS-Gated
6.044.000	04/04/000	Power Devices
6,011,298	01/04/2000	High Voltage Termination with Buried Field-Shaping Region
5,985,721	11/16/1999	Single Feature Size MOS Technology Power Device
5,981,998	11/09/1999	Single Feature Size MOS Technology Power Device
5,981,318	11/09/1999	Fully-dielectric-isolated FET Technology
5,960,277	09/28/1999	Method of Making a Merged Device with Aligned Trench FET and
5 007 255	05/27/1000	Buried Emitter Patterns
5,897,355	05/27/1999	Method of Manufacturing Insulated Gate Semiconductor Device to
5 960 271	02/00/1000	Improve Ruggedness Structure and Process for Reducing the On Resistance of MOS goted
5,869,371	02/09/1999	Structure and Process for Reducing the On-Resistance of MOS-gated Power Devices
5,856,696	01/05/1999	Field Effect Transistor Having Dielectrically Isolated Sources and
3,830,090	01/03/1999	Drains
5,821,136	10/13/1998	Inverted Field-Effect Device with Polycrystalline Silicon/Germanium
3,621,130	10/13/1990	Channel
5,801,396	09/01/1998	Inverted Field-Effect Device with Polycrystalline Silicon/Germanium
3,001,370	07/01/1770	Channel
5,798,549	08/25/1998	Conductive Layer Overlaid Self-Aligned MOS-Gated Semiconductor
2,770,217	00/25/1990	Devices
5,773,328	06/30/1998	Method Of Making A Fully-Dielectric-Isolated Fet
5,756,386	05/26/1998	Method of Making Trench MOS-Gated Device with A Minimum
2,720,200	00, 20, 1770	Number of Masks
5,710,443	01/20/1998	Merged Device with Aligned Trench Fet and Buried Emitter Patterns

5,708,289	01/13/1998	Pad Protection Diode Structure
5,701,023	12/23/1997	Insulated Gate Semiconductor Device Typically Having Subsurface-
		Peaked Portion of Body Region For Improved Ruggedness
5,691,555	11/25/1997	Integrated Structure Current Sensing Resistor For Power Devices
		Particularly For Overload Self-Protected Power MOS Devices
5,668,025	09/16/1997	Method of Making a FET with Dielectrically Isolated Sources and
		Drains
5,663,079	09/02/1997	Method of Making Increased Density MOS-Gated Semiconductor
		Devices
5,648,670	07/15/1997	Trench MOS-Gated Device with a Minimum Number of Masks
5,640,037	06/17/1997	Cell with Self-Aligned Contacts
5,637,889	06/10/1997	Composite Power Transistor Structures Using Semiconductor Materials
		With Different Bandgaps
5,591,655	01/07/1997	Process for Manufacturing a Vertical Switched-Emitter Structure with
		Improved Lateral Isolation
5,589,415	12/31/1996	Method For Forming a Semiconductor Structure with Self-Aligned
		Contacts
5,576,245	11/19/1996	Method of Making Vertical Current Flow Field Effect Transistor
5,574,301	11/12/1996	Vertical Switched-Emitter Structure with Improved Lateral Isolation
5,528,063	06/18/1996	Conductive-Overlaid Self-Aligned MOS-Gated Semiconductor
		Devices
5,485,027	01/16/1996	Isolated DMOS IC Technology
5,298,781	03/29/1994	Vertical Current Flow Field Effect Transistor with Thick Insulator
		Over Non-Channel Areas
5,237,481	08/17/1993	Temperature Sensing Device for Use in a Power Transistor
5,218,228	06/08/1993	High Voltage MOS Transistors with Reduced Parasitic Current Gain
5,164,325	11/17/1992	Method of Making a Vertical Current Flow Field Effect Transistor
5,156,989	10/20/1992	Complementary Isolated DMOS IC Technology
5,132,235	07/21/1992	Method for Fabricating a High Voltage MOS Transistor
5,034,785	07/23/1992	Planar Vertical Channel DMOS Structure
4,983,535	01/08/1991	Vertical DMOS Transistor Fabrication Process
4,978,631	12/18/1990	Current Source with a Process Selectable Temperature Coefficient
4,958,204	09/18/1990	Junction Field-Effect Transistor with a Novel Gate
4,956,700	19/11/1990	Integrated Circuit with High Power, Vertical Output Transistor
	00/20/4000	Capability
4,952,992	08/28/1990	Method and Apparatus for Improving the On-Voltage Characteristics
4 000 004	0 = 10 0 14 0 0 0	of a Semiconductor Device
4,929,991	05/29/1990	Rugged Lateral DMOS Transistor Structure
4,920,388	04/24/1990	Power Transistor with Integrated Gate Resistor
4,916,509	04/10/1990	Method for Obtaining Low Interconnect Resistance on a Grooved
404.055	0.4/0.7/1.00	Surface and the Resulting Structure
4,914,058	04/03/1990	Grooved DMOS Process with Varying Gate Dielectric Thickness
4,896,196	01/23/1990	Vertical DMOS Power Transistor with an Integral Operating Condition
		Sensor

4,893,160	01/09/1990	Method for Increasing the Performance of Trenched Devices and the
		Resulting Structure
4,868,537	09/19/1989	Doped Si <sub>02</sub> Resistor and Method of Forming Same
4,851,366	07/25/1989	Method for Providing Dielectrically Isolated Circuit
4,845,051	07/04/1989	Buried Gate JFET
4,832,586	05/30/1989	Dual-Gate High Density FET
4,827,324	05/02/1989	Implantation of Ions into an Insulating Layer of Increase Planar PN
		Junction Breakdown Voltage
4,824,795	04/25/1989	Method for Obtaining Regions of Dielectrically Isolated Single Crystal
		Silicon
4,813,882	03/28/1989	Power MOS Transistor with Equipotential Ring
4,799,100	01/17/1989	Method and Apparatus for Increasing Breakdown of a Planar Junction
4,798,810	01/17/1989	Method for Manufacturing a Power MOS Transistor
4,794,436	12/27/1988	High Voltage Drifted-Drain MOS Transistor
4,791,462	12/13/1988	Dense Vertical J-MOS Transistor
4,774,196	09/27/1988	Method of Bonding Semiconductor Wafers
4,767,722	08/30/1988	Method for Making Planar Vertical Channel DMOS Structures
4,759,836	07/26/1988	Ion Implantation of Thin Film CrSi <sub>2</sub> and SiC Resistors
4,707,909	11/24/1987	Manufacture of Trimmable High Value Polycrystalline Silicon
		Resistors
4,682,405	07/28/1987	Method for Forming Lateral and Vertical DMOS Transistors
4,402,003	08/30/1983	Composite MOS/Bipolar Power Device
4,398,339	08/16/1983	Fabrication Method for High Power MOS Device
4,393,391	07/12/1988	Power MOS Transistor With a Plurality of Longitudinal Grooves to
		Increase Channel Conducting Area
4,345,265	08/17/1982	MOS Power Transistor with Improved High-Voltage Capability
4,344,081	08/10/1982	Combined DMOS and a Vertical Device and Fabrication Method
•		Therefore
4,145,703	03/20/1979	High Power MOS Device and Fabrication Method Therefore
		-

# **Education**

1982	Stanford University	Ph.D., Electrical Engineering
		Thesis: "Optimization of Discrete High Power MOS Transistors."
1970	M.I.T.	MSEE
		Thesis: "The Use of a Thermal Feedback Mechanism in Power
		Transistor Structures."
1968	M.I.T.	BSEE

#### **Publications – Books**

Blanchard, R. A., Burgess, David, "Wafer Failure Analysis for Yield Enhancement," *Accelerated Analysis*, 2000.

Blanchard, R.A., "Electronic Failure Analysis Handbook," co-author of three chapters, P. L. Martin, ed., *McGraw-Hill*, 1999.

Blanchard, R.A., Trapp, O., Lopp, L., "Semiconductor Technology Handbook," Portola Valley, California, *Technology Associates*, 1993.

Blanchard, R.A., "Discrete Semiconductor Switches: Still Improving," Chapter 3, Section 6, Modern Power Electronics, B. K. Bose, ed., Piscataway, N.J, *IEEE Press*, 1992.

Blanchard, R.A., "Power Integrated Circuits: Physics, Design, and Application," (Chapter 3 with J. Plummer) *McGraw-Hill*, 1986.

Blanchard, R.A., Gise, P., "Modern Semiconductor Fabrication Technology," *Reston Publishing Company*, 1986.

Blanchard, R.A. and others, "MOSPOWER Applications Handbook," *Siliconix, Inc.*, 1984; Sections 1.3, 2.9, 2.9.1, 2.11, 4.2, 5.6, 5.6.2, 7.1.

Blanchard, R.A., Gise, P., "Semiconductor and Integrated Circuit Fabrication Techniques," *Reston Publishing Company*, 1979.

# **Publications - Papers**

Blanchard, R.A., Wong, Chuck, "Off-line Battery Charger Circuit with Secondary-Side PWM Control," HFPC 2000 Proceedings, October 2000.

Blanchard, R. A., Kusko, Alexander, "Electrical Arcing—Its Impact on Power Quality," Power Quality Assurance, May/June 1996.

Blanchard, R. A., Kusko, Alexander, "Standby vs. Online UPS," Power Quality Assurance, March/April 1996.

Blanchard, R. A., Kusko, Alexander, "Power Electronic Equipment Protection," Power Quality Assurance, January/February 1996.

Blanchard, R.A., Li, R., "Quantitative Analysis and Measurements of Computer Local Area Network (LAN) Failures," PCIM/Power Quality/Mass Transit '95 Conference, Long Beach, California, to be presented September 9-15, 1995.

Blanchard, R.A., Medora, N., Kusko, A., "Power Factor Correction ICs - A Topological Overview," Proceedings, High Frequency Power Conversion Conference, HFPC '95, San Jose, California, May 1995.

Blanchard, R.A., Kusko, A., "Operation of Electrical Loads Supplied from Sine-Wave Current Source UPS," Proceedings, High Frequency Power Conversion Conference, San Jose, California, April 1994.

Cogan, A., Maluf, Blanchard, R.A., "A Very Large-Area, High-Power, High-Voltage DMOS Transistor," Electronic Components Conference, May 1987.

Blanchard, R.A., Dawes, W., et al., "Transient Hardened Power FETs," *IEEE Transactions on Nuclear Science*, Vol. NS-33 (6), December 1986.

Blanchard, R.A., Severns, R., Cogan, A., Fortier, T., "Special Features of Power MOSFETs in High-Frequency Switching Circuits," Proceedings, High Frequency Power Conversion Conference, Virginia Beach, Virginia, May 1986.

Blanchard, R.A., Fortier, T., Cogan, A., Harnden, J., "Low-On-Resistance, Low Voltage Power MOSFETs for Motor-drive Applications," Proceedings, Electro 86 Session 10, Boston, Massachusetts, May 1986.

Blanchard, R.A., "The Use of MOSFETs in High-Dose-Rate Radiation Environments," Proceedings, APEC 86, New Orleans, Louisiana (With R. Severns).

Blanchard, R.A., Thibodeau, P., "Use of Depletion-Mode MOSFETs in Synchronous Rectification," Proceedings of the 1986 Power Electronics Specialist Conference, Vancouver, B.C., Canada, 1986.

Blanchard, R.A., Dawes, W., et al., "Power MOSFET Usage in Radiation Environments; Circuit Design Techniques and Improved Fabrication Methods," *Digest of Papers GOMAC* 1986, San Diego, California. Received the Meritorious Paper of the Conference Award.

Blanchard, R.A., Williams, "D/CMOS Technology: SMARTPOWER Processes that Solve Different Design Problems," Proceedings of Electro '86, Session 13, March 15, 1986.

Blanchard, R.A., Cogan, A., "Future Trends in Semiconductor Switching," Proceedings, SATECH 85, Chicago, Illinois, October 1985.

Blanchard, R.A., Thibodeau, P. "The Design of a High Efficiency, Low Voltage Power Supply Using MOSFET Synchronous Rectification and Current Mode Control," PESC '85 Record, Toulouse, France, June 1985.

Blanchard, R.A., Severns, R., "The Use of MOSFETs in High-Dose-Rate Radiation Environments," Proceedings of APEC, 1986.

Blanchard, R.A., Numann, "SMARTPOWER Technology: Empty Promises or Emerging Products?" *Powertechniques*, July 1985.

Blanchard, R.A., "SMARTPOWER ICs: Process Innovation Produces Significant New Circuits," *Electronic Components News*, May 1984.

Blanchard, R.A., "The Application of High-Power MOS-Gated Structures," Proceedings, Electro 85, New York, New York, May 1985.

Blanchard, R.A., Buchanan, Tubis, "Power MOS Technology Invades Telecom," Proceedings of Intelec '84, October 1984.

Blanchard, R.A., Severns, R., "Practical Synchronous Rectification Using MOSFETs," Proceedings of Powercon 11, 1984.

Blanchard, R.A., "Process Improvements and Innovations Spur New Power ICs," *Electronic Engineering Times*, September 24, 1984.

Blanchard, R.A., "MOSPOWER Devices and Coming on Strong," *Electronic Products*, pp 71-76, July 2, 1984.

Alexander, M., Blanchard, R.A., Abramczyk, E., "Depletion-Mode MOSFETs Open a Channel into Power Switching," *Electronic Design*, June 28, 1984.

Blanchard, R.A., Severns, R., "MOSFETs Schottky Diodes Vie for Low-Voltage-Supply Designs," *EDN*, June 28, 1984.

Blanchard, R. A., "MOSPOWER Devices Boost Power-Supply Performance," *Electronic Engineering Times*, June 4, 1984.

Blanchard, R.A., Allan, G., "Understanding MOS Power Transistor Characteristics Minimizes Incoming Testing Requirements," *Test & Measurement World*, pp 78-87, January 1984.

Blanchard, R.A., Severns, R., "Practical Synchronous Rectification Using MOSFETs," Proceedings, Powercon 11, Dallas, Texas, 1984.

Blanchard, R.A., Buchanan, W., Tubis, C., "Power MOS Technology Invades Telecom," Proceedings, Intelec 84, New Orleans, Louisiana, October 1984.

Blanchard, R.A., "Power Control with Integrated CMOS/DMOS Output," Proceedings of Electro 1983, May 1983.

Blanchard, R.A., Berger, P., "Discrete and Integrated MOSPOWER Transistors in Power Conversion and Power Control Applications," Proceedings of PCI, Orlando, Florida, November 1983.

Blanchard, R.A., "MOSFETs in Arrays and Integrated Circuits," Proceedings of Electro '83, Session 7, April 1983.

Blanchard, R.A., "Status and Emerging Direction of MOS Power Technology," Proceedings of PCI/MOTOR CON '83, April 1983.

Blanchard, R.A., Alexander, M., "Use MOSPOWER as Synchronous Rectifiers in Switched-Mode Power Supplies," *Powerconversion International*, Vol. 9., No. 4, pp 16-26, April 1983.

Blanchard, R.A., "Power Control With Integrated CMOS/DMOS Output," Proceedings, Electro 1983, New York, New York, May 1983.

Blanchard, R.A., Alexander, M., "Use of MOSPOWER as Synchronous Rectifiers in Switched-Mode Power Supplies," *Powerconversion International*, Vol. 9, No. 4, March 1983.

Blanchard, R.A., Severns, R., "Designing Switched-Mode Power Converters for Very Low Temperature Operation," Proceedings, Powercon 10, San Diego, California, March 1983.

Blanchard, R.A., Harnden, J., "MOSFETs Control More Power in the Same-sized Package," *Electronic Design*, pp 107-114, December 9, 1982.

Blanchard, R.A., Oxner, "Logic-Compatible MOSFETs Simplify High-Power Interfacing," *EDN*, pp 105-109, November 24, 1982.

Blanchard, R.A., "Bipolar and MOS Transistors: Emerging Partners for the 1980's," Proceedings, Intelec 1982, Washington, D.C., October 1982.

Blanchard, R.A., "The Use of MOS Power Transistors in Hybrid Circuits," *The International Journal for Hybrid Microelectronics*, Vol. 5(2), p. 130-137, November, 1982.

Blanchard, P.A., "A New High-Power MOS Transistor for Very High Current, High Voltage Switching Applications," Proceedings of Powercon 8, 1981.

Blanchard, R.A., "VMOS Power Transistors in Automotive Systems - An Update," International Automotive Engineering Congress and Exposition, Detroit, Michigan, February 1981.

Blanchard, R.A., Glogoija, M., Baker, R., White, K., "A New High-Power MOS Transistor for Very High Current, High Voltage Switching Applications," Proceedings, Powercon 8, Dallas, Texas, 1981.

Blanchard, R.A., "Power MOS transistors: Structure and Performance," *Powerconversion International*, March/April 1980.

Blanchard, R.A., "The VMOS Power Device - A Direct Interface between Microprocessors and Electromechanical Actuators," International Automotive Engineering Congress and Exposition, Detroit, Michigan, March 1977

Horiuchi, S., Blanchard, R.A., "Boron Diffusion in Polycrystalline Silicon Layers," *Solid-State Electronics*, Vol. 18, p. 529-532, 1974.

Blanchard, R.A., Lane, R., Grav, P., Stafford, K., "A Completely Monolithic Sample/Hold Amplifier Using Compatible Bipolar and Silicon-Gate FET Devices," *IEEE Journal of Solid-State Circuits*, Vol. SC-9 (6), December 1974.

Blanchard, R.A., "High Voltage Simultaneous Diffusion Silicon-Gate CMOS." *IEEE J.S.S.C.*, SC-9, No. 3, pp 103-110, June 1974.

#### **Professional Associations and Achievements**

- Senior Member, Institute of Electrical and Electronics Engineers
- Member, Electronic Device Failure Analysis Society
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Printed: 03/10/08